

OB 426509

CTGGCTCCAAGTTGTCCACCCGGACCGCCTGGGTGTCCACCCGGCTCCCGAGCCCCCTCTGGGGCGGGCGGGCGGGCTGGG 80
CCCCCCCCCTACCAAGAAAACAGGAAGAACCAAGGCTCGTCACTGGCACCCAGCTCCCTACCTCTGTGCCAGCCGCCTGGCTGTGGCA 180
CCCCATTCCCAGCGTCCCCACTGTGACCACTTGCTCAGTGTGCCCTCACCTGCCCTAGTTCCCTGAGGGGGCGATGGGGGGGAG 270
M A G R

Sma I

GCTCTCTGGTTCTGGGGGGCATTCACGGCTGTGATTCTGCTGAGGAACCTCCCCCGTGGCCCTCCGAGCCCTGGCACC 360
G S L V S W R A F H G C D S A E E L P R V S P R F L R A W H

Sma I

CCCCCTCCGCTCAGCCAGGATCCAACGAGCCCTGGGCCCCGGCACCCAGTGTATCACAAATGGAGCACACCCGCCCCAAGCCAG 450
P P P V S A R M P T R R W A P G T O C I T K C E H T R P K P

Sst I

Kpn I

GGGAGCTGGCCTCCCAACGGGACGTGGTACCATCCTGGAGGGCTGGAGAACAGAGCTGGTACCCGGCTCAAGCACCACACCAGT 540
G E L A F R K G D V Y T I L E A C E N K S W Y R V K H H T S SH3

Pvu II

CACAGGAGGGCTGCTGGCAGCTGGGGGGCTGCGGGAGCGGGAGGCCCCCTCCGAGACCCAAAGCTCAGCTCATGGGGTGGTCCACG 630
G O E G L L A A G A L R E R E A L S A D P K L S L M F W F H

Pvu II Pst I

CGAAGATCTGGGGCAGGAGCCTGTCAGCAGCTGCAGCTCCCGAGGATGGCTTCTGGTCCGGAGTCCGGCCACCCGGGG 720
G K I S G Q E A V Q O L Q P P E D G L F L V R E S A R H P G SH2

Cla I

ACTACGCTCTGTGCGTACCTTGGCCGACGTACCCACTACCGCGTGTGCACCCGACGCCACCTCACAAATCGATGAGGCCGTGT 810
D Y V L C V S F G R D V I H Y R V L H R O G H L T I D E A V

TCTTCTGCAACCTATGGACATGGAGCATACAGCAAGGACAAGGGCGTATCTGCACCAAGCTGGTGAAGACCAABCGGAAACACG 900
F F C N L M O M V E H Y S K D K G A I C T K L V R P K R K H

Pst I

GGACCAAQTCGGCCAGGAGCAGCTGGCCAGGGCGGGCTGGTACTGAACCTGCAGCATTGACATTGGAGCACAGATGGAGAGGGAG 990
G T K S A E E E L A R A G W L L N L O H L T L G A Q I G E G

Pst I

Sst I

AQTTGGAGCTGCTCTGCAGGGTAGTACCTGGGGAAAAGGTGGCCGTGAACAATATCAAGTGTGATGTGACAGCCCAGGCCCTCTGG 1080
E F G A V L O G E Y L G Q K V A Y K N I K C D V T A Q A F L JK

ACGAGACGGCCGTATGACGAAGATGCAACACGGAGAACCTGGTGGCTCTGGCCGTATCTGCACCAAGGGCTGTACATTGTGATGG 1170
D E T A V H T K M Q H E N L V R L L G V I L H Q G L Y I V M

Sma I

Pst I

AGCACGTGAGCAAGGGCAACCTGGTGAACCTTCTGGGACCCGGGGTCAAGCCCTCGTAACACCCGCTCAGCTCTGCAGTTCTCTGC 1260
E H V S K G N L V N F L R T R G R A L V N T A Q L L O F S L

FIGURE 1A

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HinD III

ACCTGGCCGACGGCATGGAGTACCTGGAGAGCAAGAAGCTTGACCGGACCTGGCCCCCCCACATCTGTCTCACACGGACCTGG 1350
H V A E G M E Y L E S K L V H R D L A A R N I L V S E D L

TGCCCAAGGTAGCGACTTTGCCCTGCCAAAGCCGAGCGGAAGGGCTAGACTCAAGCCGGCTGCCCTCAAGTGGACGGCCCCGAGG 1440
V A K Y S D F G L A K A E R K G T D S S R L P V K W T A P E

Nde I

CTCTCAAACACGGGAAGTTACCCAGCAAGTCGGATGTCTGGAGTTGGGGTCTCTGGACGTCTCATATGGACCCGCTCCGT 1530
A L K H G K F T S K S D V W S F G V L L V E V F S Y G R A P

Kpn I

ACCTAAAATGTCACTCAAACACGGTGTGGAGCCGTGGACAAGGGCTACCGCATGGAACCCCCCGAGGGCTGTCCAGGGCCGTGGAC 1620
Y P K H S L K E V S E A V E K G Y R M E P P E G C P G P V H

Pvu II

TCTCATGACGACCTGCTGGAGCCAGACCCCCCCCCCCCCACCCCTCCGAAACTGGCGAGAAAGCTGGCCGGAGCTACCGAGTC 1710
Y L M S S C W E A E P A R R P P F R K L A E K L A R E L R S.

CAGGTGCCCCAGCCTCCGTCTAGGGCAGGACGGCACGGCTCCACCTGGCCCCGAAGCCAGGACCCCTGACCCCATCCGCTGGGGCCCT 1800
A G A P A S V S G Q D A D G S T S P R S O E P .

Sma I

TGGCCCCAGAGGACCGAGACAGTCCAGAGCTGGCGCTGGGGCACTGACCAGGCCAAGGAGGGTCCAGGCAGGCAAGTCATCCCTGG 1890

TCCCCACACCAAGGGCTGGCCACCTAGGGGGCTCTGGCGGCCCTGGACACCCACGACCTGGAAAGGATGATCGCCCCATAAACACGG 1980

ATTCTAACGACTCTAAAAAA 2000

FIGURE 1B

CCGCTTTGCTTAGAGCTTGAGAGTCAAAC

CCCACATGTATACTTCGGCTCTAGCGAGT

TGATAATATGGATACAC

M D T

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AAATCTATTCTAGAAGAACTCTCTCAAAAGATCACAGCAAAAGAAGAAAATGTCACCAAATAATTACAAGAACGGCTTTGTTT 180
K S I L E E L L K R S O O K K K M S P N N Y K E R L F V L

ACCAAAACAAACCTTCTACTATGAATATGACAAAATGAAAAGGGCAGCAGAAAAGGATCCATTGAAATTAGAAAATCAGATGTGTG 270
T K T N L S Y Y E Y D K M K R G S R K G S I E I K K I R C V

GAGAAAGTAAATCTGAGGAGCAGACGCCGTAGAGAGACAGTACCCATTTCAGATTGCTATAAAGATGGCTCTCTATGTCTATGCA 360 PH
E K V N L E E O T P V E R O Y P F O I V Y K D G L L Y V Y A

TCAAATGAAGAGAGCCGAAGTCAGTGGTCAAAGCATTACAAAAGAGATAAGGGTAACCCCCACCTGCTGGTCAAGTACCATAGGG 450
S N E E S R S O W L K A L Q K E I R G N P H L L V K Y H S G

TTCTTGGACGGGAAGTCCCTGTGTTGCCAGCAGAGCTGTAAGCAGCCCCAGGATGTACCCCTGGGAAGCATACTGCTAATCTGCAT 540
F F V D G K F L C C O O S C K A A P G C T L W E A Y A N L H

ACTGCAGTCATGAAGAGAAACACAGAGTCCCACCTCCCAGACAGAGTGTGAAGATACTCGGGCAGTCCCTGTTCTCAAAATGGAT 630
T A V N E E K H R V P T F P D R V L K I P R A V P V L K M D

GCACCATCTTCAAGTACCACTCTAGCCAATATGACAACGAATCAAAGAAAAACTATGGCTCCAGCCACCCTTCAAGTACCAAGTCTA 720 SH3
A P S S S T T L A Q Y D N E S K K N Y G S O P P S S T S L

GCGCAATATGACAGCAACTCAAAGAAAATCTATGGCTCCAGCCAAACTTCACATGCAGTATATTCAAGGGAAAGACTTCCCTGACTGG 810
A Q Y D S N S K K I Y G S O P N F N M O Y I P R E D F P D W

TGGCAAGTAAGAAAATGAAAAGTAGCAGCAGCAGTGAAGATGTTGCAAGCAGTAACCAAAAAGAAAGAAATGTGAATCACACCCTCA 900
W Q V R K L K S S S S S E D V A S S N O K E R N V N H T T S

AAGATTTATGGAATTCCCTGAGTCAGTTCATCTGAAGAAGAGGAAACCTGGATGATTATGACTGGTTGCTGGTAAACATCTCAGA 990
K I S W E F P E S S S S E E E E N L D D Y D W F A G N I S R

TCACAATCTGAACAGTTACTCAGACAAAAGGAAAAGAAGGAGCATTATGGTTAGAAATTGAGCCAAGTGGGAATGTACACAGTGTCC 1080 SH2
S Q S E Q L L R Q K G K E G A F M V R N S S O V G M Y T V S

TTATTTAGTAAGGCTGTGAATGATAAAAAGGAACACTGTCAAACATTACCAACGTGCATACAAATGCTGAGAACAAATTATACCTGGCAGAA 1170
L F S K A V N D K K G T V K H Y H V H T N A E N K L Y L A E

AACTACTGTTTGATTCCATTCAAAGCTTATTCAACACAAATTCAAGCAGGCATGATCACACGGCTCCGCCACCCGTGTCA 1260
N Y C F D S I P K L I H Y H Q H N S A G M I T R L R H P V S

ACAAAGGCCAACAGTCCCCACTCTGTCCTGGAAATGGAATCTGGAACTGAAAAGAGAAGAGATTACCTGTTGAAGGAGCTG 1350
T K A N K V P D S V S L G N G I W E L K R E E I T L L K E L

-GGAAGTGGCCAGTTGGAGTGGTCCAGCTGGCAAGTGGAGGGCAGTATGATGTTGCTGTTAAGATGATCAAGGAGGGCTCCATGTCA 1440
G S G Q F G V V O L G K W K G Q Y D V A V K M I K E G S M S

GAAGATGAATTCTTCAGGAGGCCAGACTATGAAACTCAGCCATCCAAAGCTGGTAAATTCTATGGAGTGTGTTCAAAGGAATAC 1530
E D E F F Q E A Q T M M K L S H P K L V K F Y G V C S K E Y

CCCATAACATAGTACTGAATATATAAGCAATGGCTGCTGCTGAATTACCTGAGGAGTCACGGAAAAGGACTTGAACCTCCAGCTC 1620 TK
P I Y I V T E Y I S N G C L L N Y L R S H G K G L E P S Q L

TTAGAAATGTGCTACGATCTGTGAAGGCATGGCTTCTGGAGAGTCACCAATTACACCCGGACTGGCTGCTCGTAACGTGTTG 1710
L E M C Y D V C E G M A F L E S H Q F I H R D L A A R N C L

GTGGACAGAGATCTGTGAAAGTATCTGACTTGGAAATGACAAGGTATGTTGATGACCAAGTATGTCAGTCAGTCAGGGAAACAAAG 1800
V D R D L C V K V S D F G M T R Y V L D D Q Y V S S V G T K

FIGURE 2A

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TTTCCAGTCAGTGGTCAGCTCCAGAGGTGTTCAATTACTTCAAATACACCCAGCAAGTCAGACGTATGGCATTGGATCCTGATGTGG 1890
F P V K W S A P E V F H Y F K Y S S K S D V W A F G I L M W

GAGGTGTTCACTGGGAAGCAGCCCTATGACTTGTATGACAACCTCCAGGTGGTCTGAAGGTCTCCAGGGCACAGGCTTACCGG 1980
E V F S L G K O P Y D L Y D N S Q V V L K V S Q G H R L Y R

CCCCACCTGGCATCGGACACCATCTACAGATCATGTACAGCTGGCACGAGCTTCCAGAAAAGCGTCCCACATTCACTCCTG 2070
P H L A S D T I Y Q I M Y S C W H E L P E K R P T F O O L L

TCTTCATTGAACCACCTCGGAAAAAGACAAGCATTGAAGAAGAAATTAGGAGTGCTGATAAGAATGAATAGATGCTGCCACCCATT 2160
S S I E P L R E K D K H .

TTCATTCACTTAAGGAAAGTAGCAAGGCATAATGTAATTAGCTAGTTAAATAGTGTCTGTATTGTCTATTAGAAATGAA 2250
CAAGGCAGGAAACAAAGATTCCCTGAAATTAGGTCAAATTAGTAATTTGTTATGCTGCCCTGATATAACACTTCCAGCCTATA 2340
GCAGAACATTTCAACTGCAATATAGAGACTGTGTTATGTGTAAGACTGAGCAGAACTGAAAAATTACTTATTGGATATTCAATT 2430
CTTTCTTATATTGTCATTGTCACAACAATTAAATACTACCAAGTACAAAAAAAAAAAAAAA 2500

FIGURE 2B

CCCGACTGTCAAAGACAGGAACAGACTTCAAACACGGGGAGAGCTCTGGGAAACCAAGACGTGGAGGTTTACCAAGGCATAAGAAC 90
 AAAACACACCTCTTAGTGAGCAGCTGCCAGCTCTGCTCACTTTGCTCGGGTAGCACCTCAGCCACAGAAAGCAAGCCGTAAC 180
 TCTCTCCAGTAGGACTTGCTGCAACCCAGCTGGACTCATCTGAAACGGACTTGCATACTCCGAAAGTATGGTAGTTGGTCT 270
 M V S W C
 CACTTCAGTTGCTGGTGAAGGAAGATAAGGTGGATCGCAGAGACTAAGGGAGAGGGACAAGCCCTGCTCTTCTCCCCACCAAG 360
 →
 GCACAACTGAGCAACATCTGAGAGGCTCTGGGAGTACCTAGAACCTATCTCCCCTGTTGTCACGGAGGCAGACAAGTCAACCGTGA 450
 M S N I C O R L W E Y L E P Y L P C L S T E A D K 8 T V
 TTGAAAATCCAGGGGCECTTCCTCCCCAGTCACAGAGGCATGGCCACTACTTGTGGCTTGTGATTACCAAGGCTCCGACTGCTG 540
 I E N P G A L C S P Q S O R H G H Y F V A L F D Y Q A R T A SH3
 AGGACTTGAGCTCCAGCAGGTGACAAACTCAAGTTCTGGACACTTGCATGAGGGCTGGTCTTCCCAGACACTTGGAGAAAAGAC 630
 E D L S F R A G D K L Q V L D T L H E G W W F A R H L E K R
 CACATGGCTCCAGTCAGCAACTACAAGGCTATTCCTCTAAGTACGGCTGAGGACAGAACGCTACAGGACAGAGCCGGTGGTTCTTG 720
 R D G S S Q O L Q G Y I P S N Y V A E D R S L Q A E P W F F
 CACCAATCGGAAGATCAGATGGAGAGAAACAATTATTCAGAAAACAAGACCCCTCTTCTAATCAGAGAAAAGTGAAGCCAAA 810
 G A I G R S D A E K O L L Y S E N K T G S F L I R E S E S O SH2
 AAGGAGAATTCTCTCTTCAAGTTAGATGGAGCAGTTGAGGAAACTACAGAATTAAAGACTGGATGAAGGGGATTTTCACCC 900
 K G E F S L S V L D G A V V K H Y R I K R L D E G G F F L T
 CAAACAAGAATCTTCAACACTGAACGAATTGTGAGCCACTACACCAAGACAAGTACGGGCTGTGTCAAGCTGGGAAACCATCCT 990
 R R R I F S T L N E F V S H Y T K T S D G L C V K L G K P C
 TAAAGATCCAGGTCCACGCTCCATTGATTGCGTATAAAACCGTGGACCAATGGAGATAGACCCGAACTCCATACACCTCTGAACC 1080
 L K I O V P A P F D L S Y K T V D O W E I D R N S I O L L K
 CATTGGGATCTGGTCAAGTTGCCAACTATGGAGGTCTGTGAAACAATACCAACTCCACTGGAGTAAACATTAAACCAAGTTCAA 1170
 R L G S G Q F G E V W E G L W N N T T P Y A V K T L K P G S
 TGGATCCAATGACTTCTGAGGGAGGCACAGATAATGAAGAACCTAAGACATCCAAAGCTTCCAGCTTATGCTGTTGCACTTTAG 1260
 M D P N D F L R E A Q I M K N L R H P K L I Q L Y A V C T L
 AAGATCCAATTATATTACAGAGTTGAGACATGGAGTCTGCAAGAATATCTCCAAATGACACTGGATAAAAATCCATCTGA 1350
 E O P I Y I I T E L M R H G S L Q E Y L O N D T G S K I H L TK
 CTCACAGGTAGACATGGGGCACAGGTTGCTCTGGATGGCTATCTGGAGTCTGGAACTACATTACAGAGATCTGGCTGCCAGAA 1440
 T Q O V D M A A Q V A S G M A Y L E S R N Y I H R D L A A R
 ATGTCTCGTTGGTAAACATAATATCTACAAAGTAGCAGATTGGACTTGCAGAGTTTAAGGTAGATAATGAAGACATCTATAAT 1530
 N Y L V G E H N I Y K V A D F G L A R V F K V D N E D I Y E
 CTAGACACCAATAAAGCTGCCGTGAAGTGGACTGCCCGAAGCCATTCTGAGTAAATAAATTCACTTACAGGTATGCTGAAATCCAGATGTGGTCAT 1620
 S R H E I K L P V K W T A P E A I R S N K F S I K S D V W S
 TTGGAATCTTCTTATGAAATCATTACTATGGAAAATGCCCTACAGTGGTATGACAGGTGCCAGGTAAATCCAGATGTTGGCTAAA 1710
 F C I L L Y E I I T Y G K M P Y S G M T G A Q V I Q M L A O
 ACTATAGACTCCGCAACCATCCAACGTCCACAGCAATTACAACATCATGTTGGAGTGTGGAAATGCAGAGCCTAAGGAACGACCTA 1800
 N Y R L P Q P S N C P O Q F Y N I M L E C W N A E P K E R P

FIGURE 3A

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CATTTGAGACACTGC~~G~~TGGAAACTTGAACACTATTTCAAACAGACTCTTCATATTCAAGATGCAAATAACTTCATAAGATGAACACTGG 1890
T F E T L R W K L E D Y F E T D S S Y S D A N N F I R .
AGAAGAATATCAAATAATAAAAGTAGCAAAACAAATTCAAATAATCCATTCCAAAATACAATGTTATCAACCAACTGCACAATCAGTTAT 1880
CCTCACATATTCAACTGATACGATAAAAGTTGCCCATGTATTATGAAAAAGATTATTTGTGCATTTATTGACTGGCAACACTGCAGGAC 2070
AGTCAGGTATATATAATTGCTCACTGCCCTGGAAAATTAAGCACACTAAACCAAGTTATTTCTTTAAGAGATACTTACATTTCCA 2160
TTTATTGTTGAAATGTGCCATCAAGAGAATCAACAGATGATAGTCCAATTTTACTCACTGATGACTGTGAGCATTTECTGTTAC 2250
TGATTAGACTGGTTATTCAATTCCCTCAGATTCCGAATCCCAGGCTGTTATTATGAAGGAATTGATTGCTTGCTCACAGCAG 2340
GACCTGCTTGGAGATTTTTCTCTTTAAAATCCTGTAACATACAATGATGGTAAAGCCATGTTAAATGACTTGATTGACTTC 2430
GACTAATTGCACATTTTTCTATGCATAAAAAAATGATGCACCTGTTGAGAAAACGAAGTCTTTCATTTGAGAAGGAAATGATGG 2520
AATTTTCTGACTTCAGTATGTCAACTGAGAGTCATATACATTAGTTAACATCTTAATATTGAGAATCAGGTTGCAAACGGATG 2610
AGTTATTATCTATGCAAATGTGAGAAATGCTAATAGCCCATAAGTCTGAGAAATACGTATCAAAATAGTTAGGAAAATGAGACCGAGA 2700
ACAGTAGGATTGCTGTGGCTAGACTTCTGAGTAATTAATAAAGAAAAAGAAGTACCAAAAAAAAAAAAAA 2770

FIGURE 3B

Expression of MKK1 and MKK2

		<u>MKK1</u>	<u>MKK2</u>
	Human		
Meg/Eryth	Meg-01	+++	+++
	K562	++	+
	Mo7e	++	+
	HEL	+++	++
Myelo/Mac	KG-1	+	++
	HL-60	+	+
	TF-1	+	+
B-cell	ALL-1	-	+
	Raji	-	-
	Daudi	-	-
T-cell	Molt-3	-	-
	Jurkat	-	-
Epithelial	HeLa	-	-
	Rodent		
	BM	+	+++
	Spleen	+++	+
	Thymus	-	-
	Liver	-	-
	Brain	+	-
rat neural	P19	+	-

FIGURE 4

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**Immunoprecipitation Of In Vitro Transcribed
Translated MKK1 And MKK2 Proteins**

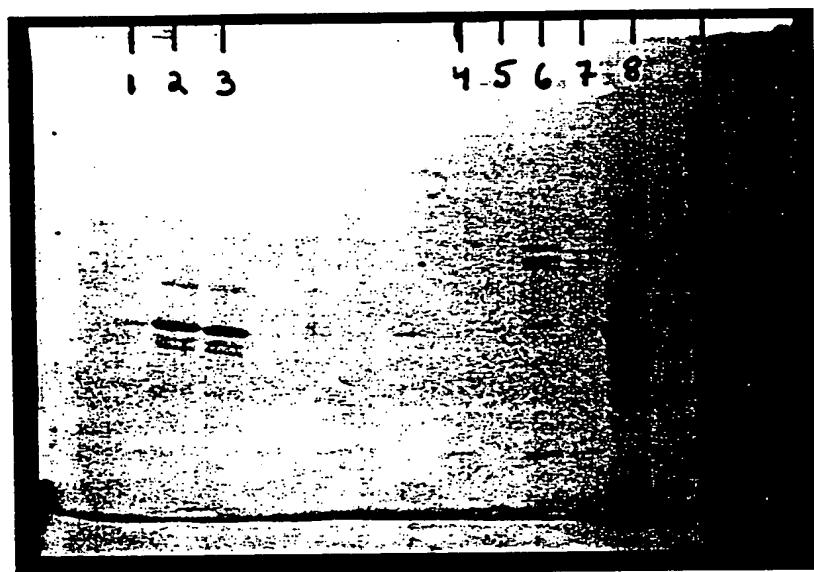


FIGURE 5

Antisense MKK1 Expression Suppresses AChE Production In Primary Murine Bone Marrow Cultures

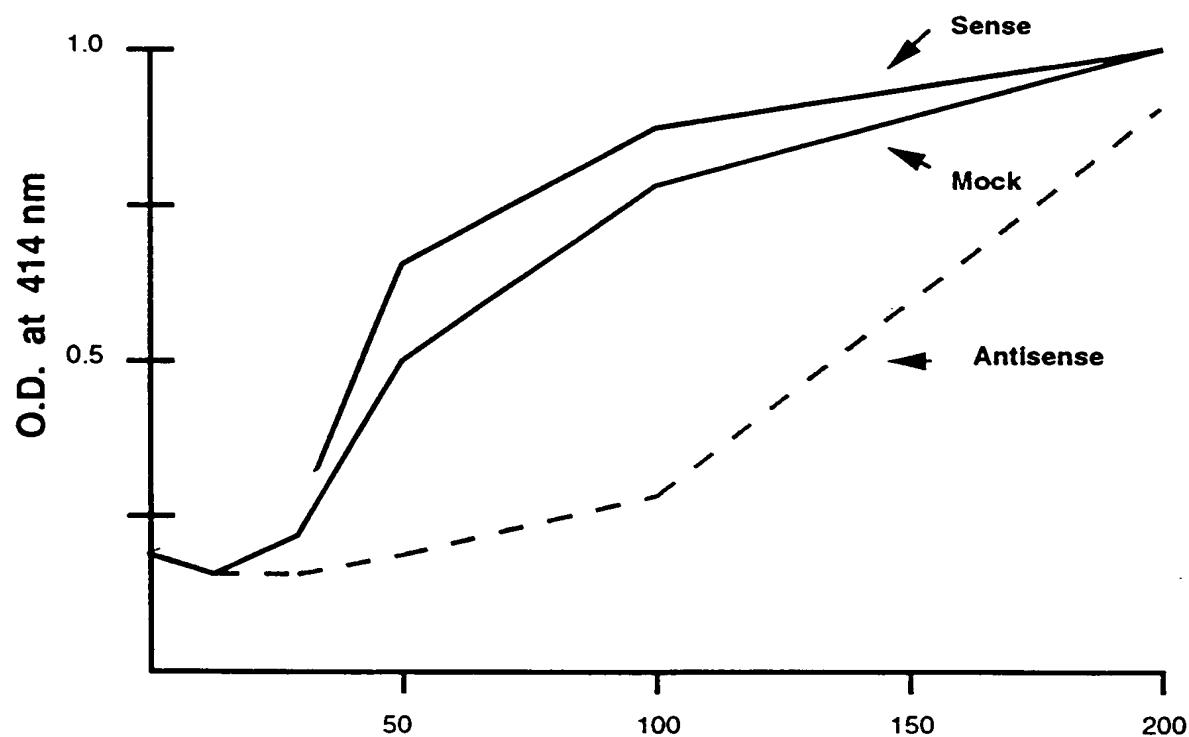


FIGURE 6A

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Cell Number $\times 10^3$ /200 ul

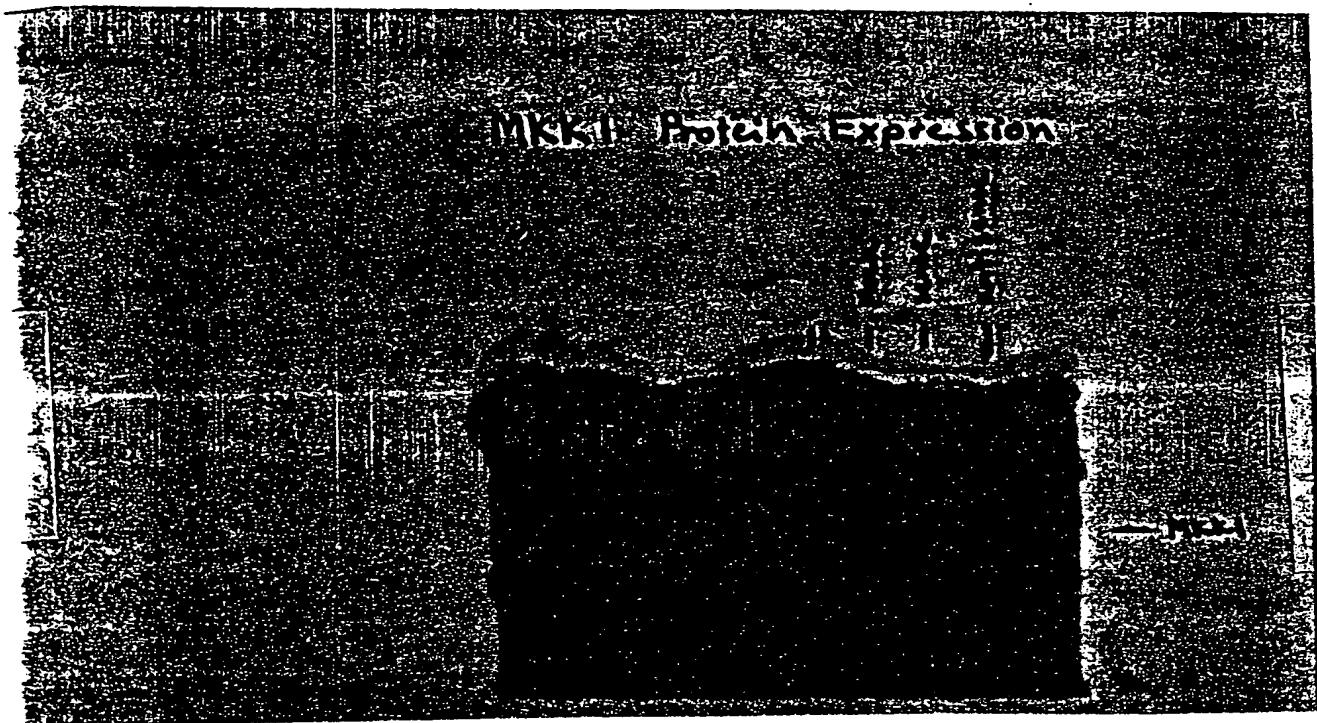


FIGURE 6B

MKK2 AND MKK3 AUTOPHOSPHORYLATE
TRANSPHOSPHORYLATE PROTEINS WHEN EXPRESSED IN BACTERIA

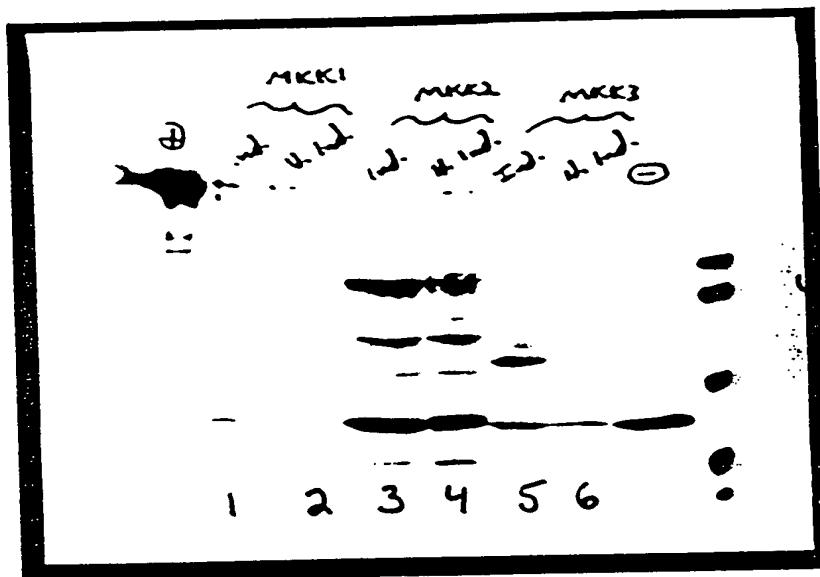


FIGURE 7

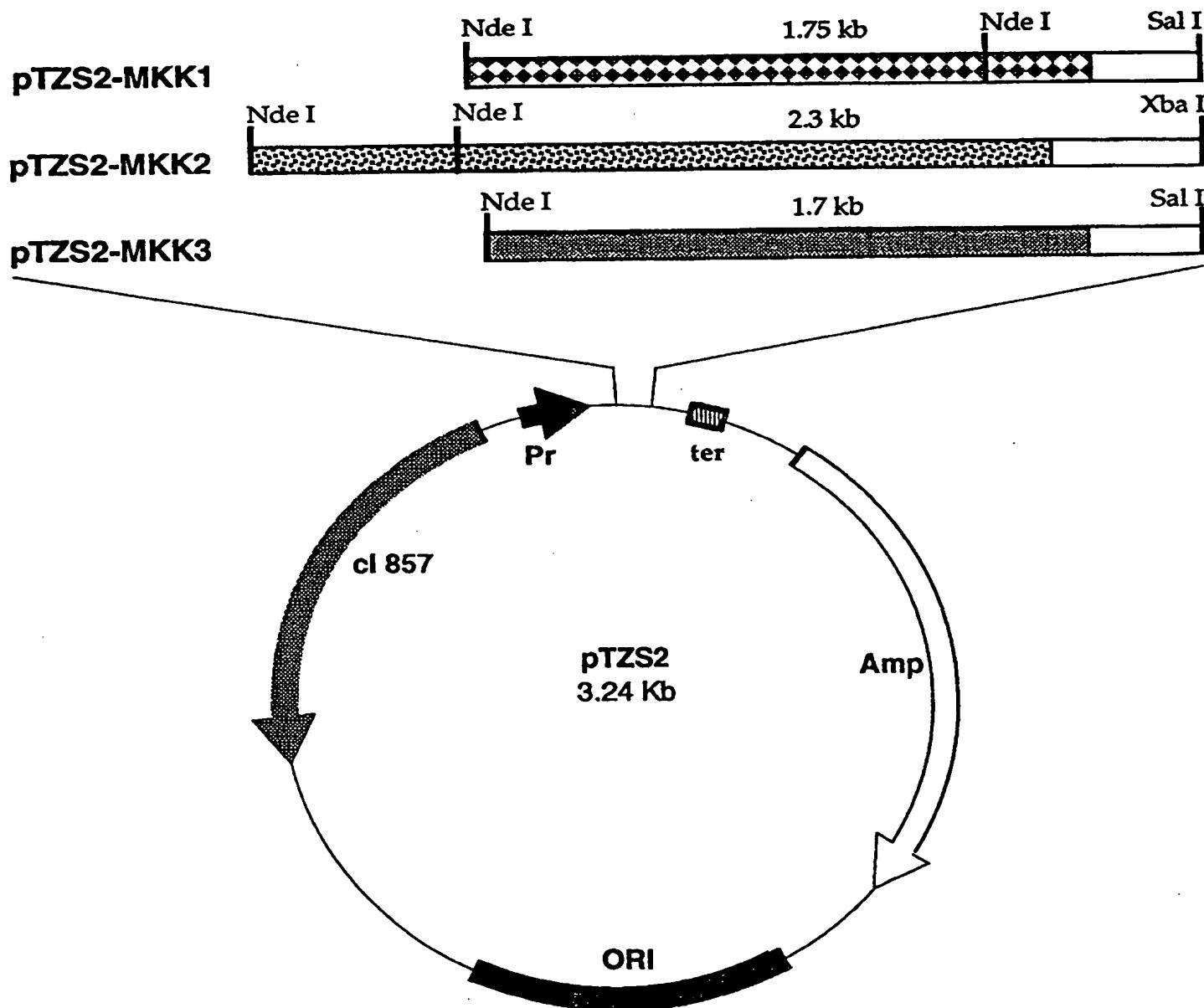


FIGURE 8

1 MAGRGSLVSWRAFHGCDSAELPRVSPRFL MKK1 aa
 1 MSAIQAA --- hCSK (JH0559)
 31 RAWHPPPVSVARMPTRRWAPGTOCITKCEHT MKK1 aa
 8 -----WPSGTECIAKYNFH hCSK (JH0559)
 61 RPKPGE LAFRKGDVVTILEACENKS WYRVK MKK1 aa
 22 GTAEQDLPFCKGDVLTI VAVTKDPNWYKAK hCSK (JH0559)
 91 HHTSGOEGLLAAGALREREALSAADPKLSLM MKK1 aa
 52 NKV-GREGTIPANYVQKREGVKAGTKL SLM hCSK (JH0559)
 121 PWFHGKISGOEA VOOLOOPPEDGLFLVRESA MKK1 aa
 81 PWFHGKITREQAERLLYPPE TGLFLVREST hCSK (JH0559)
 151 RH PGDY VLCVSFG RDVIHYRVLHRDGHLTI MKK1 aa
 111 NYPGDT TLCVSCDGKV EHYRIMYHASKLSI hCSK (JH0559)
 181 DEAVFFCNLM DMVEHYSKDKGAICTKLVRP MKK1 aa
 141 DEEVYFE NLMQLV EHYTS DADGLCTR LIKP hCSK (JH0559)
 211 KRKHGTKS AEEELARAGWLLNLOHLT LGAQ MKK1 aa
 171 KVMEGTVA AAQDEFYRSGWALNMKE LKLLQ hCSK (JH0559)
 241 IGEGEFGAVLOGEYLGOOKVAVKNIKCDVTA MKK1 aa
 201 IGKGEFGDVM LGDYRGNKVAVKCIKN DATA hCSK (JH0559)
 271 Q AFLDETAVM T KMOHENLVRLLGVILHO -- MKK1 aa
 231 Q AFLA EASVMTQLRH S N LVQ LLGVIV E EKG hCSK (JH0559)
 299 GLYIVMEHVSKGNL VNFLRTTRGRALVNTAQ MKK1 aa
 261 GLYIVTEYMAKGSLV DYLRSRGRS VLG GDC hCSK (JH0559)
 329 LLQFSLHVVAEGM EYLESKKLVH RDLAARNI MKK1 aa
 291 LLKFSLDVC EAM EYLEGNNFVH RDLAARNV hCSK (JH0559)
 359 LVSEDLVAKVSDFG LAKAERKGLDSSRLPV MKK1 aa
 321 LVSEDNVAKVSDFG LTK EAASS T QDTGKLPV hCSK (JH0559)
 389 KWTAPEALKHGKFTSKSDVWSFGVLLWEVF MKK1 aa
 351 KWTAPEALREKKFSTKSDVWSFGI LWEIY hCSK (JH0559)
 419 SYGRAPYPKMSLKEVSEAVEKGYRME PPEG MKK1 aa
 381 SFGRVPYPRIPLKDV VPRVEKGYKMDAPDG hCSK (JH0559)
 449 CPGPVHVL MSSCWEAEPARRPPFRKLAEK L MKK1 aa
 411 CPPAVYEV MKNCWHLDAA MRP SFLQLR EQL hCSK (JH0559)
 479 ARELRSAGAPASVSGODADGSTSPRSOEPL MKK1 aa
 441 EH ----- IKTHELH ----- L hCSK (JH0559)

FIGURE 9

1	M D T K S I L E E L L L K R S Q Q K K K M S P N N Y K E R L	MKK2 aa
1	M A A - V I L E S I F L K R S Q Q K K K T S P L N F K K R L	hAtk (X58957)
1	M N N F I L L E E Q L I K K S O O K R R T S P S N F K V R F	hTKT (L10717)
1	M M V - - - - -	mTec (X5663)
31	F V L T K T N L S Y Y E - - Y D K M K R G S R K G S I E I K	MKK2 aa
30	F L L T V H K L S Y Y E Y D F E R G R R G S K K G S I D V E	hAtk (X58957)
31	F V L T K A S L A Y F E D R - - H G K K R T L K G S I E L S	hTKT (L10717)
4	- - - - -	mTec (X5663)
59	K I R C V E K V N L E E Q T P V E R Q - - - - -	MKK2 aa
60	K I T C V E T V V P E K N P P P E R Q I P R R G E E S S E M	hAtk (X58957)
59	R I K C V E I V K S D - - - - -	hTKT (L10717)
4	- - - - -	mTec (X5663)
78	- - - - - Y P F Q I V Y K D G L L Y V Y A S N E E	MKK2 aa
90	E Q I S I I E R F P Y P F Q V V Y D E G P L Y V F S P T E E	hAtk (X58957)
70	- - I S I P C H Y K Y P F Q V V H D N Y L L Y V F A P D R E	hTKT (L10717)
4	- - - - - S F P V K I N F H S S P - - - - - Q	mTec (X5663)
98	S R S Q W L K A L Q K E I R G N P H L L V K Y H S G F F V D	MKK2 aa
120	L R K R W I H Q L K N V I R Y N S D L V Q K Y H P C F W I D	hAtk (X58957)
98	S R Q R W V L A L K E E T R N N N S L V P K Y H P N F W M D	hTKT (L10717)
17	S R D R W V K K L K E E I K N N N N I M I K Y H P K F W A D	mTec (X5663)
128	G K F L C C Q Q S C K A A P G C T L W E A Y A N L H T A V N	MKK2 aa
150	G Q Y L C C S Q T A K N A M G C Q I L E N R N G S L K P G S	hAtk (X58957)
128	G K W R C C S Q L E K L A T G C A Q Y D - - - - - P	hTKT (L10717)
47	G S Y Q C C R O T E K L A P G C E K Y N L F E S S I - - - - mTec (X5663)	
158	E E K H R V P T F P D R V L K I P R A V P V L K M D A P S S	MKK2 aa
180	S H R K T K K P L P P - - - T P E E D Q I L K K P L P P E	hAtk (X58957)
149	T K N A S K K P L P P - - - T P E D N R - - - - -	hTKT (L10717)
73	- - - - - R K T L P P - - - A P E - - - I K K R R P P -	mTec (X5663)
188	S T T L A Q Y D N E S K K N Y G S Q P P S S S T S L A Q Y D	MKK2 aa
206	P A A A P V S T S E L K K - - - - - V V A L Y D	hAtk (X58957)
166	- - - R P L W E P E E T V - - - - - V I A L Y D	hTKT (L10717)
89	P P I P P E E E N T E E I - - - - - V V A M Y D	mTec (X5663)
218	S N S K K I Y G S Q P N F N M Q Y I P R E D F P - D W W Q V	MKK2 aa
225	Y M P M N A N D L Q L R K G D E Y F I L E E S N L P W W R A	hAtk (X58957)
182	Y Q T N D P Q E L A L R R N E E Y C L L D S S E I H W W R V	hTKT (L10717)
108	F Q O A T E A H D L R L E R G Q E Y I I L E K N D L H W W R A	mTec (X5663)
247	R K L K S S S S S E D V A S S N Q K E R N V N H T T S K I S	MKK2 aa
255	R D - - K N G Q E G Y I P S N Y V T E - A - - - - -	hAtk (X58957)
212	Q D - - R N G H E G Y V P S S Y L V E K S - - - - -	hTKT (L10717)
138	R D - - K - - - - - - - - - - -	mTec (X5663)
277	W E F P E S S S S E E E N L D D Y D W F A G N I S R S Q S	MKK2 aa
273	- - - - - E D S I E M Y E W Y S K H M T R S O A	hAtk (X58957)
231	- - - - - P N N L E T Y E W Y N K S I S R D K A	hTKT (L10717)
141	- - - - - Y G W Y C R N T N R S K A	mTec (X5663)
307	E Q L L R Q K G K E G A F M V R N S S O V G M Y T V S L F S	MKK2 aa
292	E Q L L K Q E G K E G G F I V R D S S K A G K Y T V S V F A	hAtk (X58957)
250	E K L L L D T G K E G A F M V R D S R T A G T Y T V S V F T	hTKT (L10717)
154	E Q L L R T E D K E G G F M V R D S S Q P G L Y T V S L Y T	mTec (X5663)

FIGURE 10A

337	K - A V N D K K G T V K H Y H V H - - T N A E N K L Y L A E	MKK2 aa hAtk (X58957)
322	K S T - G D P Q Q G V I R H Y V V - - C S T P Q S Q Y Y L A E	hTKT (L10717)
280	K A V V S E N N P C I K H Y H I K E T N D N P K R Y Y V A E	mTec (X5663)
184	K F G - G E G S S G F R H Y H I K E T A T S P K K Y Y L A E	
364	N Y C F D S I P K L I H Y H Q H N S A G M I T R L R H P V S	MKK2 aa
349	K H L F S T I P E L I N Y H Q H N S A G L I S R L K Y P V S	hAtk (X58957)
310	K Y V F D S I P L L I N Y H O H N G G G L V T R L R Y P V C	hTKT (L10717)
213	K H A F G S I P E I I E Y H K H N A A G L V T R L R Y P V S	mTec (X5663)
394	T K A N K V P D S V S L G N G I W E L K R E E I T L L K E L	MKK2 aa
379	Q Q N K N A P S T A G L G Y G S W E I D P K D L T F L K E L	hAtk (X58957)
340	F G R Q K A P V T A G L R Y G K W V I D P S E L T F V Q E I	hTKT (L10717)
243	T K G K N A P T T A G F S Y D K W E I N P S E L T F M R E L	mTec (X5663)
424	G S G Q F G V V Q L G K W K G Q Y D V A V K M I K E G S M S	MKK2 aa
409	G T G Q F G V V K Y G K W R G O Y D V A I K M I K E G S M S	hAtk (X58957)
370	G S G Q F G L V H L G Y W L N K D K V A I K T I R E G A M S	hTKT (L10717)
273	G S G L F G V V R L G K W R A O Y K V A I K A I R E G A M C	mTec (X5663)
454	E D E F F O E A Q T M M M K L S H P K L V K F Y G V C S K E Y	MKK2 aa
439	E D E F I E E A K V M M N L S H E K L V Q L Y G V C T K Q R	hAtk (X58957)
400	E E D F I E E A E V M M K L S H P K L V Q L Y G V C L E Q A	hTKT (L10717)
303	E E D F I E E A K V M M K L T H P K L V Q L Y G V C T Q O K	mTec (X5663)
484	P I Y I V T E Y I S N G C L L N Y L R S H G K G L E P S Q L	MKK2 aa
469	P I F I T E Y M A N G C L L N Y L R E M R H R F Q T Q O L	hAtk (X58957)
430	P I C L V F E F M E H G C L S D Y L R T Q R G L F A A E T L	hTKT (L10717)
333	P I Y I V T E F M E R G C L L N F L R Q R Q G H F S R D M L	mTec (X5663)
514	L E M C Y D V C E G M A F L E S H Q F I H R D L A A R N C L	MKK2 aa
499	L E M C K D V C E A M E Y L E S K O F L H R D L A A R N C L	hAtk (X58957)
460	L G M C L D V C E G M A Y L E E A C V I H R D L A A R N C L	hTKT (L10717)
363	L S M C Q D V C E G M E Y L E R N S F I H R D L A A R N C L	mTec (X5663)
544	V D R D L C V K V S D F G M T R Y V L D D Q Y V S S V G T K	MKK2 aa
529	V N D Q G V V K V S D F G L S R Y V L D D E Y T S S V G S K	hAtk (X58957)
490	V G E N O V I K V S D F G M T R F V L D D Q Y T S S T G T K	hTKT (L10717)
393	V N E A G V V K V S D F G M A R Y V L D D O Y T S S S G A K	mTec (X5663)
574	F P V K W S A P E V F H Y F K Y S S K S D V W A F G I L M W	MKK2 aa
559	F P V R W S P P E V L M Y S K F S S K S D I W A F G V L M W	hAtk (X58957)
520	F P V K W A S P E V F S F S R Y S S K S D V W S F G V L M W	hTKT (L10717)
423	F P V K W C P P E V F N Y S R F S S K S D V W S F G V L M W	mTec (X5663)
604	E V F S L G K Q P Y D L Y D N S Q V V L K V S Q G H R L Y R	MKK2 aa
589	E I Y S L G K M P Y E R F T N S E T A E H I A Q G L R L Y R	hAtk (X58957)
550	E V F S E G K I P Y E N R S N S E V V E D I S T G F R L Y K	hTKT (L10717)
453	E I F T E G R M P F E K N T N Y E V V T M V T R G H R L H R	mTec (X5663)
634	P H L A S D T I Y O I M Y S C W H E L P E K R P T F Q Q L L	MKK2 aa
619	P H L A S E K V Y T I M Y S C W H E K A D E R P T F K I L L	hAtk (X58957)
580	P R L A S T H V Y O I M N H C W K E R P E D R P A F S R L L	hTKT (L10717)
483	P K L A T K Y L Y E V M L R C W Q E R P E G R P S F E D L L	mTec (X5663)
664	S S I E P L R E K D K H	MKK2 aa
649	S N I L D V M D E E S	hAtk (X58957)
610	R Q L A E I A E S - - - G L	hTKT (L10717)
513	R T I D E L V E C E E T F G R	mTec (X5663)

FIGURE 10B

1	M S N I C Q R L W E - - - - -	MKK3 MPI aa
1	M G C V Q C K D K E A - T - - -	hFyn
1	M G C V H C K E K I S - G - - -	cYrk
1	M G S N K S K P K D A - S Q R - R R S L E P A E N V H G - A	hSrc
1	M G C I K S K E N K S - P A I - K Y R P E N T P E P V S - T	hYes
1	M G C V F C K K L E P - V A T A K E D A G L E G D F R S Y G	hFgr
1	M G C I K S K G K D S L S D D G V D L - K T Q P V R N T E R	hLyn
1	M G S M K S K - - - F L Q V G G N T F S K T E T S A S P H C	hHck
1	M G C G C S S - - - H P E D D W M E N I D V C E N C H Y	hLck
1	M G I L L S S K R Q V S E K G K G W S P V K I R T Q D K A P P	mBlk
11	- - - - - - - - - - - - - - - - -	Y L E P MKK3 MPI aa
26	S G Y R Y G T D P T P Q H Y P S F G V T S I P N - - Y N N F	hFyn
26	P P S Q Y D P D P T - Q L S G A F - - T H I P D - - F N N F	cYrk
28	G G G A F P A S Q T P S K P A S A D G H R G P S A A F A P A	hSrc
28	S V S H Y G A E P T T V S P C P S S S A K G T A V N F S S L	hYes
30	A A D H Y G P D P T K A R P A S - S F A H I P N - - Y S N F	hFgr
30	T I Y V R D P T S N K Q Q R P V P E S Q L L P G Q R F Q T K	hLyn
28	P V Y V P D P T S T I K P G P N S H N S N T P G I R - - -	hHck
26	P I V P L D G K G T L L I R N G S E V R D - P L V T Y E G S	hLck
31	P L P P L V V F N H L A P P S P N Q - - - - - - - - - - -	mBlk
15	Y L P C L S T E A D K S T V I E N P G A L C S P Q S Q R H G	MKK3 MPI aa
54	H A A - - - G G Q G L T V F G G V N - - S S S H T G T L R T	hFyn
51	H A A - - - A V S P P V P P F S G P G F Y P C N T L Q A H S S	cYrk
58	A A E P - - - - - K L F G G F N S S D T V T S P Q R A G	hSrc
58	S M T P F G G G S S G V T P F G G A S S S F S V V P S S Y P A	hYes
57	S S Q A I N P G - - - - F - - - - - L D S G T I R G	hFgr
60	D P E E - - - - - Q G - - - - - - - - - - - - - - -	hLyn
54	E A G S - - - - - E D - - - - - - - - - - - - -	hHck
55	N P P A - - - - - S P L Q D - - - - - - - - - - -	hLck
49	D P D E - - - - - E E - - - - - - - - - - - - -	mBlk
45	H - - - - - Y F V A L F D Y Q A R T A E D L S F R A G D K	MKK3 MPI aa
79	R G G T G V T L F V A L Y D Y E A R T E D D L S F H K G E K	hFyn
78	I T G G G G V T L F I A L Y D Y E A R T E D D L S F Q K G E K	cYrk
81	P L A G G V T T F V A L Y D Y E S R T E T D L S F K K G E R	hSrc
88	G L T G G V T I F V A L Y D Y E A R T T E D L S F K K G E R	hYes
74	V S G I G V T L F I A L Y D Y E A R T E D D L T F T K G E K	hFgr
66	- - - - - D I V V A L Y P Y D G I H P D D L S F K K G E K	hLyn
60	- - - - - I I V V A L Y D Y E A I I H H E D D L S F Q K G D Q	hHck
64	- - - - - N L V I A L H S Y E P S H D G D L G F E K G E Q	hLck
55	- - - - - R F V V A L F D Y A A V N D R D L Q V L K G E K	mBlk
69	L Q V L D T L H E G W W F A R H L E K R R D G S S Q Q L Q G	MKK3 MPI aa
109	F O I I L N S S E G D W W W E A R S L T T G E T T G - - - - -	hFyn
108	F H I I N N T E G D W W W E A R S L S S G A T T G - - - - -	cYrk
111	L Q I V N N T E G D W W W L A H S L S T G Q T G - - - - -	hSrc
118	F O I I N N T E G D W W W E A R S I A T G K N G - - - - -	hYes
104	F H I I L N N T E G D W W W E A R S L S S G K T G - - - - -	hFgr
90	M K V L E E H - G E W W K A K S L L T K K E G - - - - -	hLyn
84	M V V L E E S - G E W W K A R S L A T R K E G - - - - -	hHck
88	L R I L E E Q S - G E W W K A Q S L T T G Q E G - - - - -	hLck
79	L O V L R S T - G D W W L A R S L V T G R E G - - - - -	mBlk

FIGURE 11A

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99	Y I P S N Y V A E D R S L Q A E P W F F G A I G R S D A E K	MKK3 MPI aa
132	Y I P S N Y V A P V D S I Q A E E W Y F G K L G R K D A E R	hFyn
131	Y I P S N Y V A P V D S I Q A E E W Y F G K I G R K D A E R	cYrk
134	Y I P S N Y V A P S D S I Q A E E W Y F G K I T R R E S E R	hSrc
141	Y I P S N Y V A P A D S I Q A E E W Y F G K M G R K D A E R	hYes
127	C I P S N Y V A P V D S I Q A E E W Y F G K I G R K D A E R	hFgr
112	F I P S N Y V A K L N T L E T E E W F F K D I T R K D A E R	hLyn
106	X I P S N Y V A R V D S L E T E E W F F K G I S R K D A E R	hHck
110	F I P F N F V A K A N S L E P E P W F F K N L S R K D A E R	hLck
101	X V P S N F V A P V E T L E V E K W F F R T I S R K D A E R	mBlk
129	Q L L Y S E N K T G S F L I R E S E S Q O K G E F S L S V L D	MKK3 MPI aa
162	Q L L S F G N P R G T F L I R E S E T T K G A Y S L S I R D	hFyn
161	Q L L C H G N C R G T F L I R E S E T T K G A Y S L S I R D	cYrk
164	L L L N A E N P R G T F L V R E S E T T K G A Y C L S V S D	hSrc
171	L L L N P G N Q R G I F L V R E S E T T K G A Y S L S I R D	hYes
157	Q L L S P G N P Q G A F L I R E S E T T K G A Y S L S I R D	hFgr
142	Q L L A P G N S A G A F L I R E S E T L K G S F S L S V R D	hLyn
136	Q L L A P G N M L G S F M I R D S E T T K G S Y S L S V R D	hHck
140	Q L L A P G N T H G S F L I R E S E S T A G S F S L S V R D	hLck
131	Q L L A P M N K A G S F L I R E S E S N K G A F S L S V K D	mBlk
159	- - - - G A V V K H Y R I K R L D E G G F F L T R R R I F	MKK3 MPI aa
192	W D D M K G D H V K H Y K I R K L D N G G Y Y I T T R A Q F	hFyn
191	W D E A K G D H V K H Y K I R K L D S G G Y Y I T T R A Q F	cYrk
194	F D N A K G L N V K H Y K I R K L D S G G F Y I T S R T Q F	hSrc
201	W D E I R G D N V K H Y K I R K L D N G G Y Y I T T R A Q F	hYes
187	W D Q T R G D H V K H Y K I R K L D M G G Y Y I T T R V Q F	hFgr
172	F D P V H G D V I K H Y K I R S L D N G G Y Y I S P R I T F	hLyn
166	Y D P R Q G D T V K H Y K I R T L D N G G F Y I S P R S T F	hHck
170	F D Q N Q G E V V K H Y K I R N L D N G G F Y I S P R I T F	hLck
161	I T T - O G E V V K H Y K I R S L D N G G Y Y I S P R I T F	mBlk
184	S T L N E F V S H Y T K T S D G L C V K L G K P C L K I Q V	MKK3 MPI aa
222	E T L Q Q L V Q H Y S E R A A G L C C R L V V P C H K G M -	hFyn
221	D T I Q Q L V Q H Y I E R A A G L C C R L A V P C P K G T -	cYrk
224	N S L Q Q L V A Y Y S K H A D G L C H R L T T V C P T S K -	hSrc
231	D T L Q K L V K H Y T E H A D G L C H K L T T V C P T V K -	hYes
217	N S V O E L V Q H Y M E V N D G L C N L L I A P C T I M K -	hFgr
202	P C I S D M I K H Y Q K Q A D G L C R R L E K A C I S P K -	hLyn
196	S T L O E L V D H Y K K G N D G L C O K L S V P C M S S K -	hHck
200	P G L H E L V R H Y T N A S D G L C T R L S R P C Q T Q K -	hLck
190	P T L Q A L V O H Y S K K G D G L C O K L T L P C V N L A -	mBlk
214	P A P F D L S Y K T V D Q W E I D R N S I Q L L K R L G S G	MKK3 MPI aa
251	P R L T D L S V K T K D V W E I P R E S L Q L I K R L G N G	hFyn
250	P K L A D L S V K T K D V W E I P R E S L Q L L Q K L G N G	cYrk
253	P Q T Q G L A - - - K D A W E I P R E S L R L E V K L G Q G	hSrc
260	P Q T Q G L A - - - K D A W E I P R E S L R L E V K L G Q G	hYes
246	P Q T L G L A - - - K D A W E I S R S S I T L E R R L G T G	hFgr
231	P Q - - - K P W D K D A W E I P R E S I K L V K R L G A G	hLyn
225	P Q - - - K P W E K D A W E I P R E S L K L E K K L G A G	hHck
229	P Q - - - K P W W E D E W E V P R E T L K L V E R L G A G	hLck
219	P K - - - N L W A Q D E W E I P R Q S L K L V R K L G S G	mBlk

FIGURE 11B

244	Q F G E V W E G L W N N T T P V A V K T L K P G S M D P N D	MKK3 MPI aa
281	Q F G E V W M G T W N G N T K V A I K T L K P G T M S P E S	hFyn
280	Q F G E V W M G T W N G T T K V A V K T L K P G T M S P E A	cYrk
280	C F G E V W M G T W N G T T R V A I K T L K P G T M S P E A	hSrc
287	C F G E V W M G T W N G T T K V A V K T L K P G T M M P E A	hYes
273	C F G D V W L G T W N G S T K V A V K T L K P G T M S P K A	hFgr
257	Q F G E V W M G Y Y N N S T K V A V K T L K P G T M S V O A	hLyn
251	Q F G E V W M A T Y N K H T K V A V K T M K P G S M S V E A	hHck
255	Q F G E V W M G Y Y N G H T K V A V K S L Q G S M S P D A	hLck
245	Q F G E V W M G Y Y K N N M K V A I K T L K E G T M S P E A	mBlk
274	F L R E A Q I M K N L R H P K L I Q L Y A V C T L E D P I Y	MKK3 MPI aa
311	F L E E A Q I M K K L K H D K L V Q L Y A V V S - E E P I Y	hFyn
310	F L E E A Q I M K R L R H D K L V Q L Y A V V S - E E P I Y	cYrk
310	F L Q E A Q V M K K L R H E K L V Q L Y A V V S - E E P I Y	hSrc
317	F L Q E A Q I M K K L R H D K L V P L Y A V V S - E E P I Y	hYes
303	F L E E A Q V M K L L R H D K L V Q L Y A V V S - E E P I Y	hFgr
287	F L E E A N L M K T L Q H D K L V R L Y A V V T R E E P I Y	hLyn
281	F L A E A N V M K T L Q H D K L V K L H A V V T K E - P I Y	hHck
285	F L A E A N L M K Q L Q H Q R L V R L Y A V V T - Q E P I Y	hLck
275	F L G E A N V M K T L Q H E R L V R L Y A V V T R E - P I Y	mBlk
304	I I T E L M R H G S L Q E Y L Q N D T G S K I H L T O Q V D	MKK3 MPI aa
340	I V T E Y M N K G S L L D F L K D G E G R A L K L P N L V D	hFyn
339	I V T E F M S Q G S L L D F L K D G D G R Y L K L P Q L V D	cYrk
339	I V T E Y M S K G S L L D F L K G E T G K Y L R L P Q L V D	hSrc
346	I V T E F M S K G S L L D F L K E G D G K Y L K L P Q L V D	hYes
332	I V T E F M C H G S L L D F L K N P E G Q D L R L P Q L V D	hFgr
317	I I T E Y M A K G S L L D F L K S D E G G K V L L P K L I D	hLyn
310	I I T E F M A K G S L L D F L K S D E G S K Q P L P K L I D	hHck
314	I I T E Y M E N G S L V D F L K T P S G I K L T I N K L L D	hLck
304	I V T E Y M A R G C L L D F L K T D E G S R L S L P R L I D	mBlk
334	M A A Q V A S G M A Y L E S R N Y I H R D L A A R N V L V G	MKK3 MPI aa
370	M A A Q V A A G M A Y I E R M N Y I H R D L R S A N I L V G	hFyn
369	M A A Q I A A G M A Y I E R M N Y I H R D L R A A N I L V G	cYrk
369	M A A Q I A S G M A Y V E R M N Y V H R D L R A A N I L V G	hSrc
376	M A A Q I A D G M A Y I E R M N Y I H R D L R A A N I L V G	hYes
362	M A A Q V A E G M A Y M E R M N Y I H R D L R A A N I L V G	hFgr
347	F S A Q I A E G M A F I E Q R N Y I H R D L R A A N I L V S	hLyn
340	F S A Q I A E G M A F I E E R N Y I H R D L R A A N I L V S	hHck
344	M A A Q I A E G M A F I E E R N Y I H R D L R A A N I L V S	hLck
334	M S A Q V A E G M A Y I E R M N S I H R D L R A A N I L V S	mBlk
364	E H N I Y K V A D F G L A R V F K V D N E D I Y E S R H E I	MKK3 MPI aa
400	N G L I C K I A D F G L A R L I - - - E D N E Y T A R Q G A	hFyn
399	D N L V C K I A D F G L A R L I - - - E D N E Y T A R Q G A	cYrk
399	E N L V C K V A D F G L A R L I - - - E D N E Y T A R Q G A	hSrc
406	E N L V C K I A D F G L A R L I - - - E D N E Y T A R Q G A	hYes
392	E R L A C K I A D F G L A R L I - - - K D D E Y N P C O G S	hFgr
377	E S L M C K I A D F G L A R V I - - - E D N E Y T A R E G A	hLyn
370	A S L V C K I A D F G L A R V I - - - E D N E Y T A R E G A	hHck
374	D T L S C K I A D F G L A R L I - - - E D N E Y T A R E G A	hLck
364	E T L C C K I A D F G L A R I - - - D S E Y T A Q E G A	mBlk

FIGURE 11C

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394	K L P V K W T A P E A I R S N K F S I K S D V W S F G I L L	MKK3 MPI aa
427	K F P I K W T A P E A A L Y G R F T I K S D V W S F G I L L	hFyn
426	K F P I K W T A P E A A L F G K F T I K S D V W S F G I L L	cYrk
426	K F P I K W T A P E A A L Y G R F T I K S D V W S F G I L L	hSrc
433	K F P I K W T A P E A A L Y G R F T I K S D V W S F G I L L Q	hYes
419	K F P I K W T A P E A A L F G R F T I K S D V W S F G I L L	hFgr
404	K F P I K W T A P E A I N F G C F T I K S D V W S F G I L L	hLyn
397	K F P I K W T A P E A I N F G S F T I K S D V W S F G I L L	hHck
401	K F P I K W T A P E A I N Y G T F T I K S D V W S F G I L L	hLck
390	K F P I K W T A P E A I H F G V F T I K A D V W S F G V L L	mBlk
424	Y E I I T Y G K M P Y S G M T G A Q V I Q M L A Q N Y R L P	MKK3 MPI aa
457	T E L V T K G R V P Y P G M N N R E V L E Q V E R G Y R M P	hFyn
456	T E L V T K G R V P Y P G M N N R E V L E Q V E R G Y R M Q	cYrk
456	T E L T K G R V P Y P G M V N R E V L D Q V E R G Y R M P	hSrc
463	T E L V T K G R V P Y P G M V N R E V L E Q V E R G Y R M P	hYes
449	T E L I T K G R I P Y P G M N K R E V L E Q V E Q G Y H M P	hFgr
434	Y E I I V T Y G K I P Y P G R T N A D V M T A L S Q G Y R M P	hLyn
427	M E I I V T Y G R I P Y P G M S N P E V I R A L E R G Y R M P	hHck
431	T E I I V T H G R I P Y P G M T N P E V I Q N L E R G Y R M V	hLck
420	M V I V T Y G R V P Y P G M S N P E V I R S L E H G Y R M P	mBlk
454	Q P S N C P Q Q F Y N - I M L E C W N A E P K E R P T F E T	MKK3 MPI aa
487	C P Q D C P I S L H - E L M I H C W K K D P E E R P T F E Y	hFyn
486	C P G G C P P S L H - D V M V Q C W K R E P E E R P T F E Y	cYrk
486	C P P E C P E S L H - D L M C Q C W R K E P E E R P T F E Y	hSrc
493	C P Q G C P E S L H - E L M N L C W K K D P D E R P T F E Y	hYes
479	C P P G C P A S L Y - E A M E Q T W R L D P E E R P T F E Y	hFgr
464	R V E N C P D E L Y - D I M K M C W K E K A E E R P T F D Y	hLyn
457	R P E N C P E E L Y - N I M M R C W K N R P E E R P T F E Y	hHck
461	R P D N C P E E L Y - Q L M R L C W K E R P E D R P T F D Y	hLck
450	C P E T C P P E L Y N D I I T E C W R G R P E E R P T F E F	mBlk
483	L R W K L E D Y F E - T D S S Y S D A N N F I R	MKK3 MPI aa
516	L Q S F L E D Y F T A T E P Q Y Q P G E N - - - L	hFyn
515	L Q S F L E D Y F T A T E P Q Y Q P G D N - - - Q	cYrk
515	L Q A F L E D Y F T S T E P Q Y Q P G E N - - - L	hSrc
522	I Q S F L E D Y F T A T E P Q Y Q P G E N - - - L	hYes
508	L Q S F L E D Y F T S A E P Q Y Q P G D Q - - - T	hFgr
493	L Q S V L D D F Y T A T E E G Q Y Q Q - - Q - - P	hLyn
486	I Q S V L D D F Y T A T E S Q Y Q Q - - Q - - P	hHck
490	L R S V L E D F F T A T E E G Q Y O P - - Q - - P	hLck
480	L O S V L E D F Y T A T E E G Q Y E L - - Q - - P	mBlk

FIGURE 11D

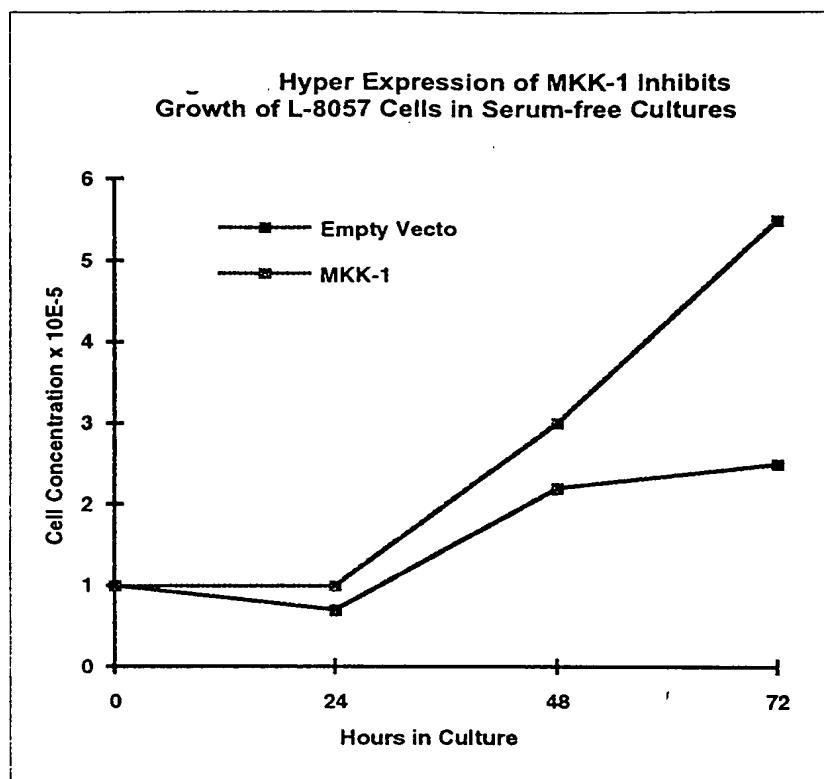


FIGURE 12

Growth Factor Response of MKK-1 Expressing L-8057 Cells

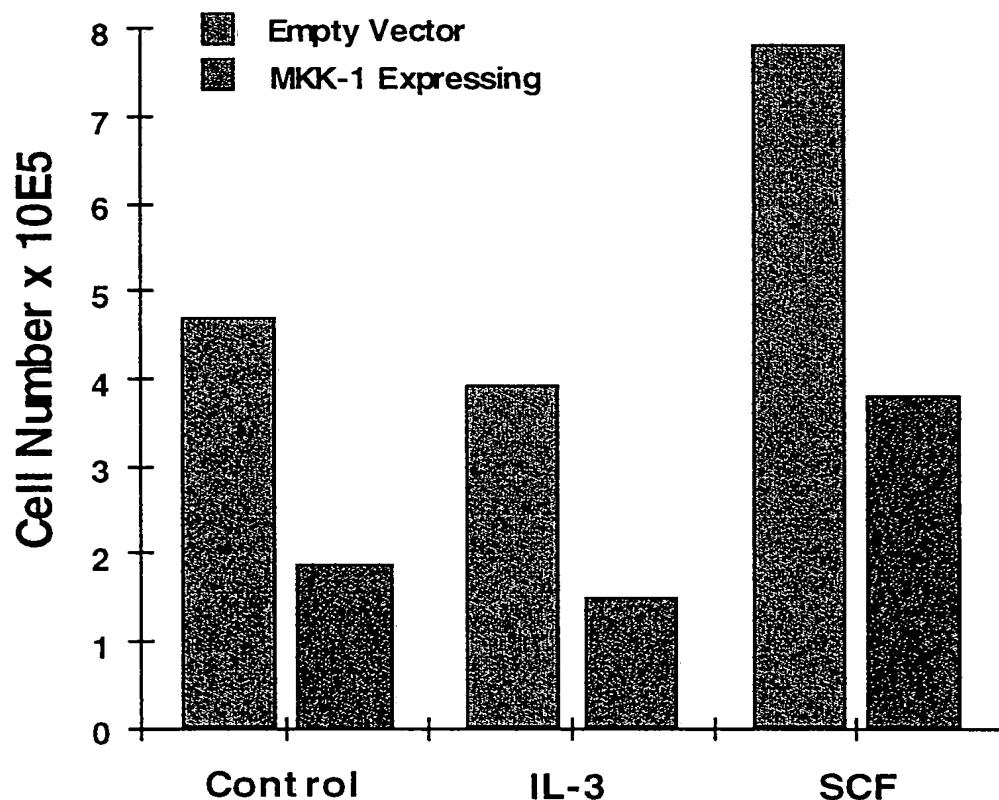
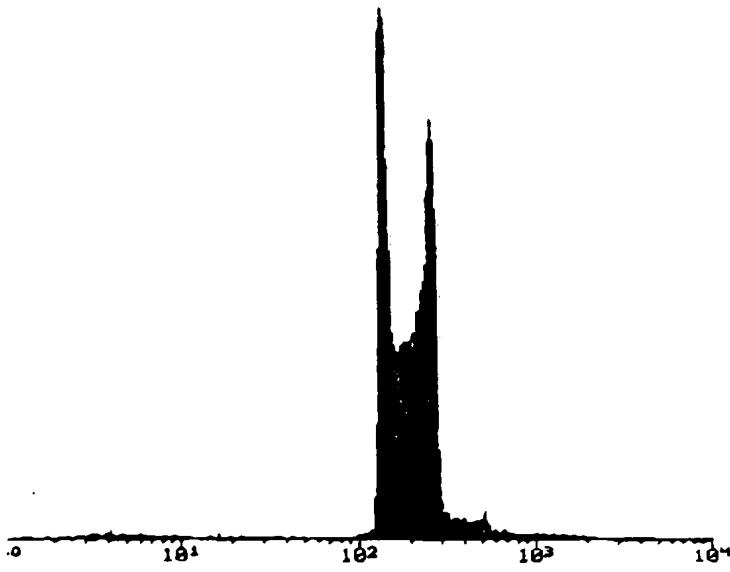


FIGURE 13

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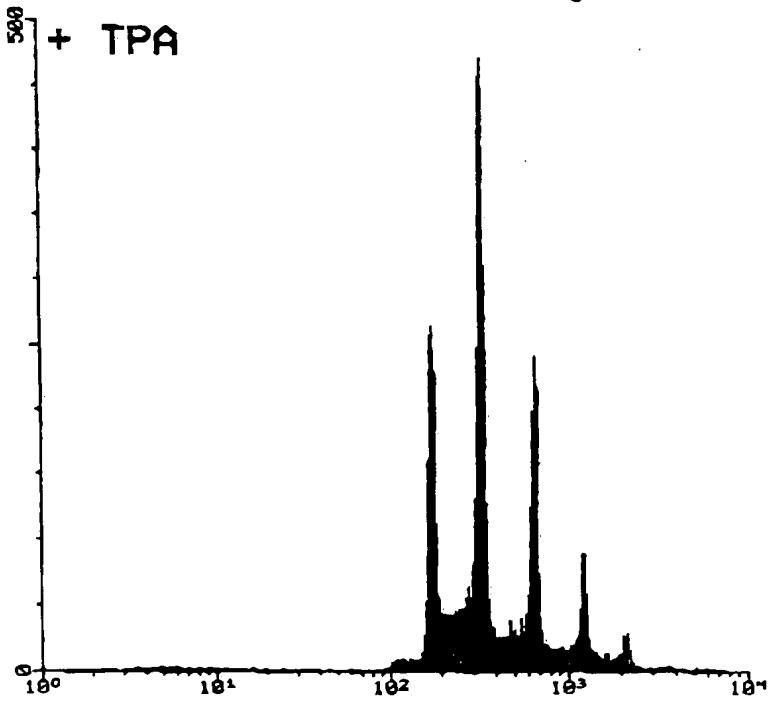
FACS37:FACS37001\FL2-H\FL2-Height

CONTROL



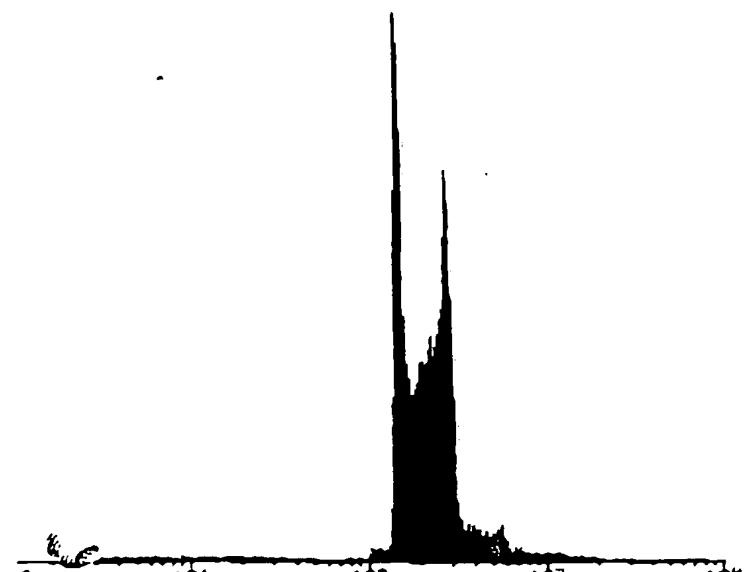
FACS37:FACS37002\FL2-H\FL2-Height

+ TPA



FACS37:FACS37003\FL2-H\FL2-Height

MKK-1



FACS37:FACS37004\FL2-H\FL2-Height

MKK-1 + TPA

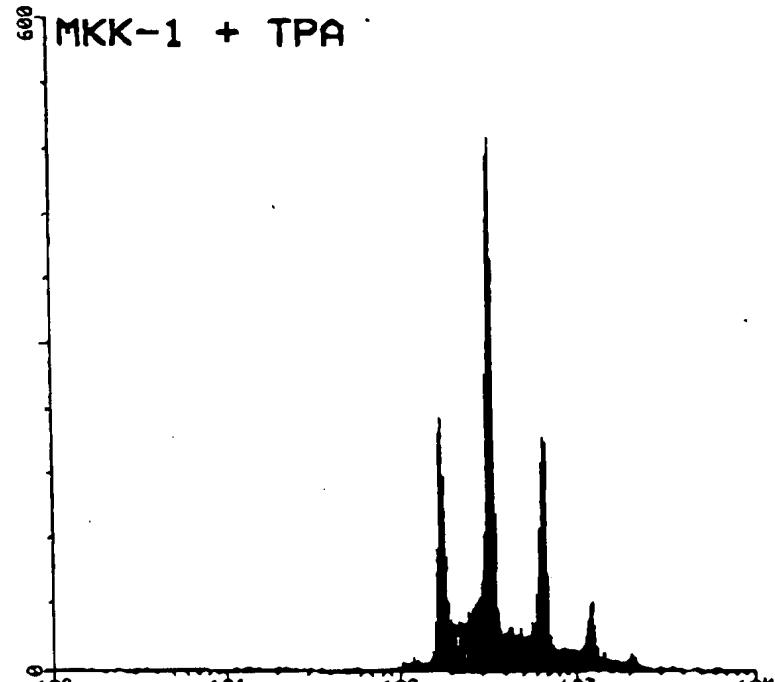


FIGURE 14